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Reply to Office Action of September 21, 2005

**REMARKS/ARGUMENTS**

Prior to this Amendment, claims 1-4, 6-12, 14-22, 33-40, 43, 62-80, 85, 86, 91, and 94 were pending in the application. On August 4, 2005, the Applicants filed a Notice of Appeal including a Pre-Appeal Brief Request for Review. Briefly, in response, prosecution was reopened with the Examiner performing an additional search resulting in the rejection of all claims on new grounds based on previously-cited U.S. Pat. No. 6,477,585 ("Cohen") and on newly-cited U.S. Pat. No. 6,658,487 ("Smith").

Claim 1 is amended to correct a typographical error. Claim 62 is amended to include the limitations of claim 66, which is canceled. Claims 1-4, 6-12, 14-22, 33-40, 43, 62-65, 67-80, 85, 86, 91, and 94 remain for consideration by the Examiner.

**Claim Rejections Under 35 U.S.C. §103**

In the Office Action dated May 4, 2005, claims 1-4, 6-12, 14-22, 33-40, 43, 62-69, 74-75, 78-80, 85-86, and 94 were rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Pat. No. 6,477,585 ("Cohen"). This rejection was traversed in prior responses by the Applicants and in response, the Examiner has performed an additional search and is now rejecting this set of claims based on the teachings of Cohen in view of Smith. Applicants traverse this rejection based on the following remarks.

As an initial matter, Applicants restate an argument that has been asserted in the prior responses. Specifically, regarding independent claim 74, the Office Action again states that claim 74 is the same method as claim 1 and rejects it for the same reasons as claim 1. However, claim 74 includes differing limitations not included in claim 1, and hence, a rejection of claim 74 requires a separate rejection indicating where each of its elements are shown or suggested in Cohen and/or Smith. This has not been provided in any of the Office Actions to date. Specifically, the sending, marking, and filtering steps are not included or include differing language than provided in claim 1. **Hence, the Examiner has failed to make out a proper case of obviousness because the Examiner has not provided explicit**

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**citations to Cohen or Smith where each and every limitation in the claim is shown or made obvious.** As a result, claim 74 and claims 75, 78, and 79, which depend from claim 74, are believed in condition for allowance.

Claim 1 calls for a filter to be provided "on said subscriber node", and this filter acts to **"process a plurality of events published on said event channel to identify said event as a matching event."** With this configuration, the subscriber node does the filtering of events published or made available on a linked event channel, i.e., the network uses subscriber-side filtering. In contrast, Cohen teaches supplier or publisher-side filtering. Hence, the network of claim 1 is not shown or suggested by Cohen.

As discussed in the prior responses, with regard to claim 1, the Office Action cites Cohen at col. 5, lines 48-49 for teaching the event channel of claim 1 and at col. 6, line 7 (consumer-side EMS filter) and col. 6, lines 19-22 for showing a filter to identify an event on the subscriber node. Applicants disagree with this construction of Cohen. At col. 5, lines 55-61 with reference to Figures 2 and 3, Cohen makes it clear that its event distribution method involves providing a single host computer running an event management system (EMS 22), i.e., the supplier or publisher that performs the filtering. According to Cohen, clients must subscribe to the EMS 22 and also define filters that are stored in a filter database 46 at the device hosting the EMS 22 (i.e., not on the event consumers 26a-26n). Also, with reference to Figure 3, the event channel is shown to be part of the EMS 22. Based on these arguments, Applicants concluded in their last response that Cohen fails to shown "a filter on said subscriber node" because as can be seen in Figure 3 the event consumers 26 are remote to the EMS 22 which stores the filters in database 46.

The September 21, 2005 Office Action indicates that the Examiner agrees with this argument that Cohen fails to teach the filter feature of claim 1. Smith is then cited at lines 36-40, col. 3, lines 58-60, col. 3, and Figs. 3 and 4 for teaching "an event filter is located on the same node as the event subscriber." Turning to Smith's teaching, it can be seen in Figures 3, 4, 6, and 7 that the described distributed computing system includes an element labeled a "filter" that is

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associated with objects (such as client and server objects 10, 12 of Fig. 3). However, the Smith "filter" does not teach the filter of claim 1 as the claimed filter is provided "to process a plurality of events published on said event channel to identify said event as a matching event" and such matching event "includes at least one pattern field that matches a filter field within said filter." Hence, the filter on the subscriber node of claim 1 identifies matching events based on a pattern in the event and a filter field in the filter.

The Smith "filter" does not perform any such matching function and the "events" of Smith are not described as having a pattern field. As a result, Smith does not overcome the deficiencies of Cohen because it does not teach an active filtering or matching mechanism at each subscriber node. This can be seen by studying Smith from col. 4, line 6 to line 46. Smith teaches that its "filters" do not perform any matching to identify events that an application receives (see the last element of claim 1 where matching events are received by the application). Instead, Smith teaches that the filters intercept outgoing messages and incoming messages and pass these intercepted messages to an "event collection mechanism." There is no matching or filtering but instead all events are apparently passed on to the event collection mechanism (element 14 in the figures). With reference to Figures 6 and 7, the Smith filters are described as attaching keys to messages prior to passing on to a receiving filter, but there is no discussion of a receiving filter matching or filtering received messages with a pattern it stores to identify matching messages for receipt by an associated object.

However, it should be understood that Smith does teach that filtering is performed in its distributed system – just not at the filters associated with the distributed objects. For example, at col. 6, lines 14-45, Smith states that "necessary filtering is carried out by the respective Event Dispatcher 54 which passes on only that information which has been requested by its individual Visualizer Application." Hence, Smith teaches that actual filtering is performed by an event dispatch mechanism 16 as shown in Figure 9 rather than by the filters associated with the objects. For these reasons, Smith fails to overcome the

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deficiencies of Cohen. Further, the combination of the two references' teachings would not result in the claimed filter because both teach filtering of messages at a central location and not at the node running an application.

Further, Cohen fails to teach "an application...opens said event channel at said subscriber node." The Response to Arguments in the prior Office Action fails to address this argument for allowing claim 1 over Cohen provided in the last response (and the September 21, 2005 Office Action simply restates its assertions that Cohen teaches this limitation). The Office Action cites Cohen at lines 48-49 of column 5 for providing this teaching. Cohen, at this citation, states "Communications through the event channel are "asynchronous" in that they may be provided to the event consumers at any time." Cohen does NOT teach that an application at the subscriber node that defines the filter and its fields also acts to open an event channel provided between the publisher and the subscriber nodes. If the event consumers of Cohen are taken to be the subscriber nodes, there is no discussion in Cohen that an application on these nodes acts to open an event channel. From col. 5, lines 14-37, it appears that communications between the EMS/event suppliers and the event consumers is controlled by the EMS. For this additional reason, Cohen fails to teach or suggest each and every limitation of claim 1.

Claims 2-4 and 6-11 depend from claim 1 and are believed allowable as depending from an allowable base claim. Claim 94 also depends from claim 1 and is believed allowable as Cohen fails to teach a plurality of subscriber nodes each including a filter defined by an application on the node, opening an event channel over a communication link to each such node, and using the filter at each node to identify matching events for receipt by the application. Additionally, it should be noted that Smith does not teach that its "filters" are defined by the associated objects, and Applicants request claim 94 be found allowable or additional references be cited showing this additional limitation of claim 94.

Regarding independent claim 12, the Office Action relies on Cohen and Smith to reject the claim in a manner similar to that of claim 1. Therefore, the

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reasons for allowing claim 1 over Cohen and Smith are applicable to claim 12. Additionally, Cohen fails to teach a queue on the same node that assigns the filter and receives and uses matching events. In contrast, the queue 47 is shown to be part of the EMS 22 and is placed on single host within a network as shown in Figures 2 and 3 (e.g., not on the consumer nodes 26). This additional reason for allowing claim 12 was provided in the last response and the Pre-appeal Brief Request for Review, but the Examiner did not address the argument in the Response to Arguments (i.e., the event log is not on the node of the application). For this additional reason, the rejection of claim 12 based on Cohen is not proper and should be withdrawn. Smith does not overcome these additional deficiencies of Cohen with respect to claim 12. Specifically, Smith does not teach that the matching events are placed on a queue on said node by its "filter" elements. As a result, the combination of Cohen and Smith does not support a rejection of claim 12, and claims 12 and claims 14-22, which depend from claim 12, are believed allowable.

Independent claim 33 calls for opening an event channel at a node that provides a shared communication path on a communication link and to subscribing to receive events at the node over the event channel. Cohen fails to teach these features as it describes (as discussed with reference to claim 1) running an EMS on a single node and then distributing events to specific nodes after filtering on the EMS node. The method of claim 33 is very different in that it supports fully asynchronous communication over the event channel without requiring an event publisher to provide addresses of receiving nodes as opposed to the API 32 and service 22 of Cohen as described with reference to lines 43-46, col. 5.

The method of claim 33 includes running an application on the node, receiving and processing an event at the node over the event channel, and then when a match is determined "at said node" passing the received event to the application on the node. Distribution out of the node is not required after filtering as is the case in the Cohen method. For these reasons, claims 33 and claims 34-40 and 43, which depend from claim 33, are believed allowable over Cohen.

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Smith fails to overcome these deficiencies of Cohen for the reasons provided for claim 1. Specifically, Smith's "filters" do not perform receiving an event over an event channel as called for in claim 33. Further, as discussed with reference to claim 1, Smith fails to teach finding "a match according to said filter" and when a match is found "passing the received event to the application on the node" In other words, where does Smith teach that it passes matches to an object? In contrast, it shows sending all events received by a "filter" on to an associated object. For these reasons, the combined teaching of Cohen and Smith fails to support a rejection of claim 33. Claims 33 and claims 34-40 and 43, which depend from claim 33, are believed in condition for allowance.

Independent claim 62 was rejected in the Office Action for the same reasons as provided for rejecting claim 1, and the reasons provided for allowing claim 1 over Cohen and Smith are applicable to claim 62. Further, Cohen and Smith fail to teach or suggest granting access to an event channel on a communication link and associating such access or permission to an application running on a node network.

Applicants studied the cited portions of Cohen line 59, col. 12, line 12, col. 14, and lines 34-35, col. 5 and could find no teaching of this limitation and particularly, of associating such access to an application running on a node network. Further, claim 62 is amended to include the limitations of claim 66, which is cancelled, and Cohen fails to show creating a name context for the event channel as called for in claim 62, with the cited portion of Cohen at col. 11, line 28 simply refers to "the EMS event channel" but provides no teaching of providing a name context for a created event channel that, as will be appreciated, can later be used for providing events to subscribers of a particularly named event channel. Hence, Cohen and Smith do not support a rejection of claim 62 or claims 63-69, which depend from claim 62, and these claims are believed in condition for allowance.

Independent claim 80 was rejected in the Office Action for the reasons provided for rejecting claim 1, and hence, the reasons provided for allowing claim 1 over Cohen and Smith are believed applicable to claim 80. Specifically, Cohen fails to teach using a client application for opening an event channel on the same node

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as is running the application and receiving and filtering events on the channel with a filter on the application's node. Further, Cohen fails to teach opening such an event channel in read and write modes as called for in claim 80. The cited col. 9, lines 41-62 do not mention opening an event channel in a read mode or in a write mode or that such opening can be done by a client application on a node of a network. Based on these arguments, claim 80 and claims 85 and 86, which depend from claim 80 are not shown or suggested by Cohen, and the rejection of these claims should be withdrawn.

Further, in the Office Action, claims 70-73, 76-77, and 91 were rejected under 35 U.S.C. §103(a) as being unpatentable over Cohen in view Smith further in view of previously-cited U.S. Pat. No. 6,314,533 ("Novik"). This rejection is traversed based on the following remarks.

Referring to independent claim 70, the Office Action states that Cohen fails to teach building its filters from a "binary tree" but cites Novik at col. 2, lines 56-59, Figure 6, and at col. 14, lines 40-53 for providing teaching building filters from "search trees" (as called for in claim 70). However, at this citation, Novik states "Preferably, the filtering of events would be performed at the event provider itself, such that any events that are not requested by a subscriber would be discarded at the event provider." There is no teaching at this citation of building a filter from a plurality of search trees, of selecting a search tree from said filter, and comparing said event with said search tree as called for in claim 1.

Further, Novik teaches similarly to Cohen that filtering is performed at the event supplier or publisher. In contrast, claim 70 calls for the building, selecting, and use of the filter to be performed at the node that is also used for "receiving an event at said node." Hence, the filtering (and its construction) are performed at the event consumer or subscriber rather than at the event supplier or provider node as taught by both Cohen and Novik. Smith as discussed with reference to claim 1 also fails to teach "filtering" at a node associated with an object with the Smith "filters" simply passing all events through with copies being passed to an event collection device. Since these references fail to teach or suggest each and every limitation of

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claim 70 and actually teach away from its limitations, claim 70 is not made obvious by the combined teachings of these two references.

Claims 71-73 depend from claim 70 and are believed allowable for at least the reasons provided for allowing claim 70.

Claims 76 and 77 depend from claim 74 and are believed allowable as depending from an allowable base claim. Further, Novik fails to overcome the deficiencies noted with reference to claim 74.

Independent claim 91 is directed to a computer program product with limitations similar to that of claim 70. The reasons provided above for allowing claim 70 over Cohen and Novik are believed applicable to claim 91.

### Conclusions

In view of all of the above, Applicants respectfully request that a timely Notice of Allowance be issued in this case.

No fee is believed due for this submittal. However, any fee deficiency associated with this submittal may be charged to Deposit Account No. 50-1123.

Respectfully submitted,



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